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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/706,059	11/12/2003	Tsuyoshi Yamamoto	81784.0290	6351

26021 7590 09/17/2007

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ART UNIT	PAPER NUMBER
2627	

MAIL DATE	DELIVERY MODE
09/17/2007	PAPER

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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/706,059
Filing Date: November 12, 2003
Appellant(s): YAMAMOTO ET AL.

John P. Scherlacher
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 6/4/07 appealing from the Office action mailed 1/24/07.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

6,434096	**Akagi et al.**	**8-2002**
7,046,600	**Matsumoto**	**5-2006**

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-4 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Akagi et al. (hereafter Akagi)(**U.S. 6,434,096**) in view of Matsumoto (**U.S. 7,046,600**).

Regarding claim 1, Akagi discloses a tilt control method in an optical pickup including a tilt adjustment could for adjusting the tilt of an objective lens (see Abstract), comprising the steps of: recording an offset adjustment signal in a test recording area provided on an optical disc (Column 12, lines 40-42 and Column 54, lines 6-12), wherein said offset adjustment signal is recorded while modifying a driving signal level supplied to said tilt adjustment coil (Column 12, lines 40-45); thereafter playing back an RF signal of said offset adjustment signal that was recorded on the optical disc (Column 12, lines 40-45 and Column 54, lines 6-12), and setting said driving signal level as an

offset value for the driving signal to be supplied to the tilt adjustment coil from said offset adjustment signal that was played back (Figure 17, Elements 318, 320, 312, 313, 314, and Column 54, lines 6-12). Akagi does not disclose detecting a positive peak level (A1) and a negative peak level (A2) in the RF signal and when a beta value obtained from beta=(A1+A2)/(A1-A2) reaches a maximum, said driving signal is set. In the same field of endeavor, Matsumoto discloses detecting both positive and negative peak levels of an RF signal (Figure 5, Elements 22 and 24). Matsumoto also discloses setting a driving signal level when a beta value reaches its maximum (Column 11, lines 1-4, Figure 5, Element 24, and Figure 3 which shows a decrease in error value with maximum beta value).

Both Akagi et al. and Matsumoto disclose the use of RF information to control particular aspects of an optical disc apparatus. In Column 2, lines 58-76, Column 3, lines 13-16, and Column 4, lines 1-5 of Akagi et al., Akagi et al. describes problems which are due to imperfections in the optical pick apparatus that lead to poor recording quality. In Column 9, lines 13-19 of Matsumoto teaches that by maximizing the beta value, recording quality is optimally improved. Thus, it would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to provide the driving signal level setting of Matsumoto to the tilt control method of Akagi, motivation being to decrease a C1 error value (corresponding to poor recording quality) in order to increase the recording quality of the tilt control method (Figure 3 of Matsumoto).

Regarding claim 2, Akagi discloses wherein: the tilt control is performed by adding the set offset value to a tilt signal for performing tilt control and supplying the added signal to said tilt adjustment coil (Figure 17, Elements 320, 312, 313, and 314).

Regarding claim 3, Akagi discloses a tilt control apparatus for adjusting the tilt of an objective lens in an optical pickup (Figure 1) comprising: a signal recording circuit for recording a signal by irradiating light onto a disc via said objective lens (Figure 1, Element 4), a photo detector circuit for obtaining an RF signal by detecting reflected light from the disc via said objective lens (Figure 1, Element 9), a tilt control coil for controlling the tilt of said objective lens (Figure 17, Element 314), a tilt control circuit for controlling the driving signal level supplied to said tilt adjustment coil (Figure 17, Element 312), an offset adjustment signal is written to the disc by recording a signal to the disc by said signal recording circuit while said tilt control circuit modifies the driving signal level to the tilt control coil (Column 12, lines 40-45 and Column 54, lines 6-12), and the relationship between driving signal level and recording position is stored (Column 12, lines 30-33 and Column 54, lines 6-12), said photo detector circuit detects an RF signal of the offset adjustment signal that was recorded on the disc (Column 12, lines 40-45 and Figure 1, Element 9), and the tilt control circuit uses the driving signal level for the tilt control coil (Figure 17, Elements 312, 313, and 314). Akagi does not disclose a beta value detector circuit that detects a beta value and where the maximum value of said beta value detector is used. In the same field of endeavor, Matsumoto discloses a beta value detector that detects a beta value (Figure 5, Element 24) and which uses a maximum beta value to set a driving signal level (Column 11, lines 1-4,

Figure 5, Element 24 and Figure 3 which shows a decrease in error value with maximum beta value).

Both Akagi et al. and Matsumoto disclose the use of RF information to control particular aspects of an optical disc apparatus. In Column 2, lines 58-76, Column 3, lines 13-16, and Column 4, lines 1-5 of Akagi et al., Akagi et al. describes problems which are due to imperfections in the optical pick apparatus that lead to poor recording quality. In Column 9, lines 13-19 of Matsumoto teaches that by maximizing the beta value, recording quality is optimally improved. Thus, it would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to provide the driving signal level setting of Matsumoto to the tilt control apparatus of Akagi, motivation being to decrease a C1 error value (corresponding to poor recording quality) in order to increase the recording quality of the tilt control apparatus (Figure 3 of Matsumoto).

Regarding claim 4, Akagi discloses wherein: said tilt control circuit performs tilt control by adding said offset value to a tilt signal for performing tilt control and supplying this to said tilt adjustment coil (Figure 17, Elements 320, 312, 313, and 314).

(10) Response to Argument

Regarding applicant's arguments beginning on page 9 of the Appeal Brief and concluding on page 11, applicant argues 2 elements of the claims on pages 9 and 10. Applicant argues that Akagi et al. (hereafter Akagi) (U.S. 6,434,096) does not disclose (1) recording an offset adjustment signal in a test recording area provided on an optical disk, wherein the offset adjustment signal is recorded while modifying a driving signal level supplied to the tilt adjustment coil, and (2) playing back an RF signal of the offset

adjustment signal that was recorded to the optical disk. The Examiner respectfully disagrees. Column 12, lines 40-42 of Akagi recite, "The offset amount of the tilt error signal depending on the movement direction of the optical pickup **is stored** beforehand, the above mentioned store offset is read" (emphasis added). In this citation of Akagi, the offset signal is said to be stored in a memory. The crux of Appellant's argument is that the memory referred to is not the optical disc itself, rather a separate memory circuit 319 as shown in figure 17. However, in Column 54, lines 6-12, Akagi clearly discloses that the offset signal is stored and reproduced (reproduction of the offset signal corresponds to element (2) above) on a specific part of an optical disc. In this portion of Akagi, the memory corresponds to the disc itself. Hence, it is evident that various forms of memory are used in the tilt control apparatus of Akagi to store the offset signal, including the optical disc itself. Thus, Akagi does disclose recording and reproducing an offset signal to a test recording area provided on the disc.

Although the aforementioned storing and reproduction place of the offset signal appears to be the applicant's main argument, the Examiner provides a further discussion of Akagi's disclosure of the remaining features element (1). Namely, "recording an offset adjustment signal...wherein said offset adjustment signal is recorded while modifying a driving signal level supplied to said tilt adjustment coil" will be discussed. Again, Column 12, lines 40-42 of Akagi recite, "The offset amount of the tilt error signal **depending on the movement direction of the optical pickup** is stored beforehand, the above mentioned store offset is read" (emphasis added). This portion of Akagi's disclosure suggests that the optical pickup is moving, which in turn, requires

that a driving signal be supplied to the tilt adjustment coil to necessitate movement of the optical pickup. This directly corresponds to the "...offset adjustment signal is recorded while modifying a driving signal level supplied to the tilt adjustment coil" feature of element (1) above. Thus, Akagi also discloses the remaining features of element (1). Therefore, the Examiner believes that all the limitations of claims 1-4 of the present application have been met.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Thomas Alunkal/

Examiner AU 2627

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